

**A Giant Step
Forward in
Integrated
Circuits...**

...is available



MOGISTERS: ^{T.M.}

The much-discussed advantages of MOS (metal-oxide-silicon) circuitry are now a practical reality. The immediate availability of General Instrument's new 21-bit MOGISTERS (pronounced mo-jister), first of a complete series of MOS devices scheduled for 1965 introduction, represents a significant milestone in MOS technology, not only because of the unique design possibilities

Evaluate MOGISTERS For Substantial Cost Savings

If you're concerned with lower costs (and who isn't), you'll find MOGISTERS can help you trim equipment costs three ways:

- ▷ Lower cost per bit...substantially less than individual double-diffused JK flip-flops or single shift registers.
- ▷ Fewer packages required...Mogisters are available in register lengths up to 21 bits (16-4-1), all in a single TO-5 or flat package.
- ▷ Fewer interconnections within your system...only one hook-up, instead of 21.

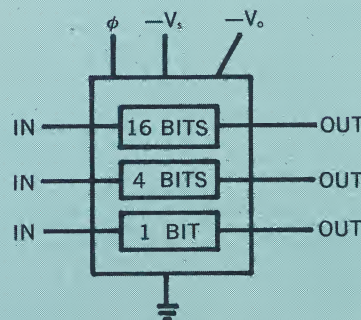
Evaluate MOGISTERS For Design Versatility

Each Mogister provides three separate and distinct multi-bit registers on one monolithic chip, sharing common supply and clock voltages.

These may be used as parallel registers, each with its own push-pull output stage; or, as 21 bits serially, by simply connecting the output of each register to the input of the next.

In addition, you may directly buffer into double-diffused integrated circuits merely by grounding the $-V_o$ pin and applying $+3V$ or $+5V$ to the ground terminal.

Each bit of delay has a cross-coupled flip-flop, permitting indefinite storage of data between shift pulses. Only a single-phase shift pulse has to be supplied — the additional 180° out-of-phase pulse ϕ is generated by an inverter in the chip.



Functional diagram



GENERAL INSTRUMENT CORPORATION

e to YOU now!

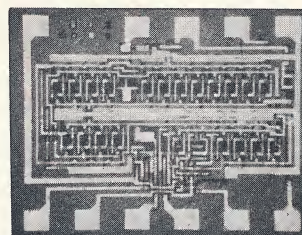
The **new** generation of MOS MONOLITHIC SHIFT REGISTERS

of MOS units in general, but also because of the *unconditionally assured voltage stability* of these GI devices in particular. For complete specifications, as well as a special application bulletin on MOS shift registers, write today to: General Instrument Corporation, Microelectronics Division, 600 West John Street, Hicksville, New York 11802.

Evaluate MOGISTERS For Superior In-System Performance

In terms of performance, Mogisters offer a line-up of advantages that just won't quit. Here are a few of the more significant ones:

- ▷ capable of operation down to D.C.
- ▷ high fan-out capability; 25 or more
- ▷ high noise immunity; 3 volts or more
- ▷ large voltage swings; 10 volts or more



MEM501
10-LEAD
TO-5 PKG.



MEM501F
FLAT PACK.

MAX. RATINGS, OPERATING CONDITIONS

Condition	MEM501 (TO-5) MEM501F (flat pack) Single Clock	MEM521 Two Clocks
Power consumption	<100 mw	<150 mw
Supply voltage ($-V_s$)	-28 volts	-26 volts, ± 2 volts
Output supply voltage ($-V_o$)	0 to -28 volts
Shift pulse amplitude	(ϕ) 0 to \leq -10 volts	(ϕ, ϕ) -26 v, ± 4 v
Shift pulse frequency	DC to 500 KC	DC to 1 Mc
Shift pulse rise and fall times (t_r, t_f)	<100 nsec	400 nsec < t_w
Shift pulse width (t_w) (to 50% points)	400 nsec < t_w < 50 μ sec	< 50 μ sec
Shift pulse input impedance	6 pf, 50 k Ω	4 pf
Input swing	0 to \leq -10 volts	0 to \leq -10 volts
Output swing (no dc load)	0 to \leq -12 volts	0 to \leq -12 volts
Input capacitance	2 pf	2 pf
Output impedance	<2 k Ω at ground <10 k Ω at -10 volts	<2 k Ω at ground <10 k Ω at -10 volts
Operating temperature *	-55°C to 85°C	-55°C to 125°C

*For higher temperature requirements, order MEM501-1 (-55 to +125°C).

MICROELECTRONICS DIVISION

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MICROELECTRONICS DIVISION

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